

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [66 FR 22910 5/7/2001]

[Docket No. 99-NM-74-AD; Amendment 39-12219; AD 2001-09-12]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 727-100, -100C, and -200 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 727-100, -100C, and -200 series airplanes, that, for certain airplanes, requires a one-time inspection of certain fuselage circumferential skin joints to determine the type of fasteners installed, and replacement of any aluminum fasteners with steel fasteners, if necessary; or modification of certain fuselage circumferential skin joints; as applicable. For certain other airplanes, this amendment also requires repetitive inspections to detect corrosion, sealant deterioration, cracking, or disbonding; repair, if necessary; and modification of certain fuselage circumferential skin joints. This amendment is prompted by reports of corrosion between the body skins and cold-bonded doublers at the fuselage circumferential skin joints. The actions specified by this AD are intended to prevent delamination of the cold-bonded doublers, which could result in corrosion of the body skins and doublers, and consequent reduced structural capability of the fuselage circumferential skin joints.

**DATES:** Effective June 11, 2001.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 11, 2001.

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Walt Sippel, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2774; fax (425) 227-1181.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain Boeing Model 727-100, -100C, and -200 series airplanes was published in the **Federal Register** on December 6, 1999 (64 FR 68062). For certain airplanes, that action proposed to require a one-time inspection of certain fuselage circumferential skin joints to determine the type of fasteners installed, and replacement of any aluminum fasteners with steel fasteners, if necessary; or modification of certain fuselage circumferential skin joints; as applicable. For certain other airplanes, that action also proposed to require repetitive inspections to detect corrosion, sealant deterioration, cracking, or disbonding; repair, if necessary; and modification of certain fuselage circumferential skin joints.

## **Comments**

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

### **Request to Delete Certain Sections of Proposed AD**

One commenter requests that Boeing Model 727 series airplanes, line numbers 153, 339, 416, and 540, be deleted from the applicability section of the proposed AD; and that paragraphs (c) and (d) of the proposal, which apply only to those airplanes, also be deleted. The commenter states that the manufacturer of those airplanes has determined that they cannot be repaired, and they were taken out-of-service.

The FAA does not concur with the commenter's request; however, the FAA agrees with the commenter's intent. Part 39 of the Federal Aviation Regulations (14 CFR part 39) states that, "No person may operate a product to which an airworthiness directive applies except in accordance with the requirements of that airworthiness directive." The Part 39 regulation provides compliance relief for airplanes that are not being operated, because affected airplanes need only be in compliance prior to return to operation. In light of this fact, the airplanes having the line numbers listed above have been deleted from the Cost Impact paragraph, below; however, the applicability section and paragraphs (c) and (d) will remain in the final rule should these airplanes be returned to operation.

### **Request to Delay or Revise Final Rule**

One commenter requests that issuance of the final rule be delayed until the FAA and the B-727 Working Group (Cargo Airline Association members) can develop a solution for the airplanes that have been converted from a passenger configuration to an all-cargo configuration. The commenter states that, if the FAA and industry are to work cooperatively to enhance safety, the more appropriate course of action would have been to place the issues addressed in the proposed rule before the Working Group, in lieu of issuing the proposed rule. The commenter notes that the FAA has worked successfully with this group in the past to identify and correct any cargo conversion problems.

The FAA does not concur. To delay this action would be inappropriate, since the FAA has determined that an unsafe condition exists and that inspections must be conducted to ensure continued safety.

A second commenter requests that the proposed AD be revised to allow for the structural benefits of the installation of the freighter conversion external doubler and the numerous inspections that are currently part of the basic airplane maintenance program, as well as the additional inspections required by AD 98-23-51, amendment 39-10932 (63 FR 67771, December 9, 1998). (That AD requires inspection/modification of fuselage skin longitudinal lap joints and is applicable to Model 727 series airplanes.) This revision of the proposal would be specific to those areas covered by the external doubler and, as such, would exempt converted freighters from the requirements of the proposed rule in the area covered by the external cargo door doubler. The commenter states that the report provided with its comments was used to obtain approval of an alternative method of compliance (AMOC) for AD 98-23-51. The report shows that the external doubler used in the cargo door modification is able to carry the loads that the skin and lap joints currently carry, even in the event that the lap joints in that area were to fail. The commenter notes that these same data can be used for the circumferential skin joints that are the subject of this AD.

The FAA does not concur to revise the final rule for the following reasons:

1. Paragraph (a) is applicable to airplanes on which the modification recommended in Boeing Service Bulletin 727-53-0084, Revision 2, dated June 5, 1972, and the additional actions (including additional fastener replacement locations) specified in Boeing Document No. D6-54860, Revision C, dated December 11, 1989, "Aging Airplane Service Bulletin Structural Modification Program--Model 727;" or the modification specified in Boeing Service Bulletin 727-53-0084, Revision 3, dated September 28, 1989; HAS been accomplished. Operators that have modified their airplanes in accordance with Revision 3 of the service bulletin may have had the steel fasteners removed and replaced with aluminum rivets. Paragraph (a) requires operators to inspect their airplanes to determine the type of fastener installed, and, if aluminum fasteners are found, replace them with the

correct steel fasteners. The need to accomplish these actions is not affected by the freighter conversion referenced by the commenter.

2. The actions specified in paragraph (b) of the final rule are essentially the same as those required by paragraph (a) of AD 90-06-09 amendment 39-6488 (55 FR 8370, March 7, 1990). But paragraph (b) of this final rule requires that future modifications be accomplished in accordance with Revision 4 of the referenced service bulletin, which ensures that the correct steel fasteners will be installed. If the installation of the cargo conversion interferes with the ability to accomplish these actions, the operator should request approval of an AMOC, as provided by paragraph (g)(1) of this AD.

3. The AMOC approved for AD 98-23-51 was for the longitudinal lap joints. The report the commenter provided supports that AMOC request and addresses the structural integrity of the longitudinal lap joints with the cargo door doubler, but it does not demonstrate that the cargo door doubler provides an acceptable level of safety for the circumferential skin joints. Based on this, the FAA finds that the technical data presented does not justify revising the final rule. The FAA will consider approval of AMOC's if the appropriate technical justification is submitted.

4. Paragraphs (c), (d), and (f) of the final rule address four airplanes that were inadvertently omitted from the applicability specified in AD 90-26-09. AD 90-26-09 requires that inspections be accomplished, and cracks repaired, in the same areas specified in this AD. The FAA has reviewed its files regarding AMOC's to this AD and has found several that pertain to airplanes that have been converted from a passenger configuration to an all-cargo configuration. Because the four airplanes that were omitted from the applicability of AD 90-26-09 have not been converted to an all-cargo configuration (some have the original equipment manufacturer's cargo door, not an after-market door), there is no concern about inspecting through the doubler to the lower skin on those airplanes. No change to the final rule is necessary in this regard.

### **Conclusion**

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

### **Cost Impact**

There are approximately 549 airplanes of the affected design in the worldwide fleet. Based on a records review, the FAA estimates that only 374 of those airplanes are still in service. The FAA estimates that 280 airplanes of U.S. registry still in service will be affected by this AD.

The number of airplanes that will be subject to the required one-time inspection to determine the type of fasteners installed is unknown. For affected airplanes, it will take approximately 45 work hours per airplane to accomplish the required one-time inspection, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of this inspection on U.S. operators is estimated to be \$2,700 per airplane.

For affected airplanes, it will take approximately 192 work hours per airplane to accomplish the required modification of the cold-bonded doublers of certain fuselage circumferential skin joints, at an average labor rate of \$60 per work hour. Required parts will cost approximately \$1,250. Based on these figures, the cost impact of this modification on U.S. operators is estimated to be \$12,770 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the proposed requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted.

### **Regulatory Impact**

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic

impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES."

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

**PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. Section 39.13 is amended by adding the following new airworthiness directive:

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "av-info.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

## **2001-09-12 BOEING: Amendment 39-12219. Docket 99-NM-74-AD.**

Applicability: Model 727-100, -100C, and -200 series airplanes; line numbers 1 through 549 inclusive; certificated in any category.

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (g)(1) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent delamination of the cold-bonded doublers, which could result in corrosion of the body skins and doublers, and consequent reduced structural capability of the fuselage circumferential skin joints, accomplish the following:

NOTE 2: For the purposes of this AD, a detailed visual inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required."

### **One-Time Inspection/Replacement**

(a) For airplanes on which the modification specified in Boeing Service Bulletin 727-53-0084, Revision 2, dated June 5, 1972, and the additional actions (including additional fastener replacement locations) specified in Boeing Document No. D6-54860, Revision C, dated December 11, 1989, "Aging Airplane Service Bulletin Structural Modification Program--Model 727;" or the modification specified in Boeing Service Bulletin 727-53-0084, Revision 3, dated September 28, 1989; HAS been accomplished: Within 36 months after the effective date of this AD, perform a one-time inspection of the fuselage circumferential skin joints to determine the type of fastener installed, in accordance with Figure 7 of Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990.

(1) If no aluminum fasteners are found, no further action is required by this AD.

(2) If any aluminum fasteners are found, prior to further flight, replace with steel fasteners, in accordance with Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990.

## **Modification**

(b) For airplanes listed in Boeing Document No. D6-54860, Revision C, dated December 11, 1989, "Aging Airplane Service Bulletin Structural Modification Program-Model 727" on which the modification specified in Boeing Service Bulletin 727-53-0084, Revision 2, dated June 5, 1972, and the additional actions specified in Boeing Document No. D6-54860, Revision C, dated December 11, 1989; or the modification specified in Boeing Service Bulletin 727-53-0084, Revision 3, dated September 28, 1989; HAS NOT been accomplished prior to the effective date of this AD: Prior to the accumulation of 60,000 total flight cycles, modify the fuselage circumferential skin joints in accordance with Part IV of the Accomplishment Instructions of Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990. Such action constitutes terminating action for the modification in that area required by AD 90-06-09, amendment 39-6488.

## **Repetitive Inspections**

(c) For airplanes having line numbers 153, 339, 416, and 540: Accomplish the requirements of paragraphs (c)(1), (c)(2), and (c)(3) of this AD at the compliance time specified in those paragraphs.

(1) Within 15 months after the effective date of this AD, perform an external detailed visual inspection and a low frequency eddy current (LFEC) inspection of the fuselage circumferential skin joints to detect corrosion or sealant deterioration, in accordance with Parts II.A. and II.B. of the Accomplishment Instructions of Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990. Repeat the external detailed visual inspection thereafter at intervals not to exceed 15 months, and repeat the LFEC inspection thereafter at intervals not to exceed 30 months.

(2) Within 3,000 flight cycles or 30 months after the effective date of this AD, whichever occurs first, perform a high frequency eddy current (HFEC) inspection of the fuselage circumferential skin joints to detect cracking, in accordance with Part II.D. of the Accomplishment Instructions of Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990. Repeat the HFEC inspection thereafter at intervals not to exceed 4,000 flight cycles or 48 months, whichever occurs first, until accomplishment of paragraph (f) of this AD.

(3) Within 48 months after the effective date of this AD, perform an internal detailed visual inspection of the fuselage circumferential skin joints to detect cracking, disbonding, or sealant deterioration; in accordance with Part II.C. of the Accomplishment Instructions of Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990. Repeat the internal detailed visual inspection thereafter at intervals not to exceed 48 months.

## **Repair**

(d) For airplanes having line numbers 153, 339, 416, and 540: If any discrepancy is detected during any inspection required by paragraph (c) of this AD, accomplish paragraph (d)(1) or (d)(2) of this AD, as applicable.

(1) If any corrosion, cracking, or disbonding is detected during any inspection required by paragraph (c) of this AD, prior to further flight, repair in accordance with Part III of the Accomplishment Instructions of Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990, except as provided by paragraph (e) of this AD. No further action is required by this AD for that area.

(2) If the sealant has deteriorated but no corrosion, cracking, or disbonding is detected during any inspection required by paragraph (c) of this AD, prior to further flight, reseal in accordance with Figure 5 or 6, as applicable, of Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990.

(e) Where the service bulletin specifies that the manufacturer may be contacted for disposition of certain repair conditions, prior to further flight, repair in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA; or in accordance with data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative (DER) who has been authorized by the Manager, Seattle ACO, to make such findings.

For a repair method to be approved by the Manager, Seattle ACO, or a Boeing DER, as required by this paragraph, the approval letter must specifically reference this AD.

### **Modification**

(f) For airplanes having line numbers 153, 339, 416, and 540: Prior to the accumulation of 60,000 total flight cycles, or within 3,000 flight cycles after the effective date of this AD, whichever occurs later, modify the fuselage circumferential skin joints in accordance with Part IV of the Accomplishment Instructions of Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990. Such action constitutes terminating action for the requirements of paragraph (c)(2) of this AD.

### **Alternative Methods of Compliance**

(g) (1) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle ACO. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

(2) An alternative method of compliance for paragraph (f) of this AD that provides an acceptable level of safety may be used in accordance with data meeting the type certification basis of the airplane approved by a Boeing Company DER who has been authorized by the Manager, Seattle ACO, to make such findings.

NOTE 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

### **Special Flight Permits**

(h) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

### **Incorporation by Reference**

(i) Except as provided by paragraph (e) of this AD, the actions shall be done in accordance with Boeing Service Bulletin 727-53-0084, Revision 4, dated August 2, 1990. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(j) This amendment becomes effective on June 11, 2001.

FOR FURTHER INFORMATION CONTACT: Walt Sippel, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2774; fax (425) 227-1181.

Issued in Renton, Washington, on April 26, 2001.

Donald L. Riggan, Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.